## Claims:

1. A compound, or an isomeric, prodrug, tautomeric, pharmaceutically acceptable salt, N-oxide, or stereoisomeric form thereof, having a structure of Formula II:

wherein

B represents  $M_nR_8$ ;

Ar represents an aryl or heteroaryl ring;

V represents O, S, or N-CN;

W represents O, S, or NR";

R' represents, independently for each occurrence, H, lower alkyl, or a metal counterion;

R" represents, independently for each occurrence, H or lower alkyl;

 $R_5$  represents H, P(=O)(OR')<sub>2</sub>, or  $M_nQ$ ;

 $R_6$  represents H, OH, or  $M_nQ$ , provided that only one of  $R_5$  and  $R_6$  represents H;

R<sub>7</sub> represents H, halogen, hydroxyl, lower alkyl or lower alkoxyl;

R<sub>8</sub> represents substituted or unsubstituted alkyl, alkenyl, alkynyl, alkoxy, aryl, heteroaryl, cyclo-alkyl, heterocyclyl, or amine;

M, independently for each occurrence, represents a substituted or unsubstituted methylene group (including C(=O) and C(=S)), NR", O, S, S(O), or S(O<sub>2</sub>);

n represents an integer from 1-4 when present in B, from 0-6 when present in  $R_5$ , and from 1-3 when present in  $R_6$ ; and

Q represents a substituted or unsubstituted: tertiary amino substituent, or nitrogencontaining heterocycle.

2. A compound of claim 1, wherein R<sub>8</sub> represents substituted or unsubstituted morpholino, piperazinyl, or cyclohexyl.

- 3. A compound of claim 1, wherein R" represents H.
- 4. A compound of claim 1, wherein  $R_5$  represents  $M_nQ$ .
- 5. A compound of claim 4, wherein the occurrence of M attached to Q represents  $CH_2$ ,  $S(O_2)$ , C(=S), or C(=O).
- 6. A compound of claim 5, wherein the occurrence of M attached to Q represents CH<sub>2</sub>.
- 7. A compound of claim 5, wherein the occurrence of M attached to Q is C(=0).
- 8. A compound of claim 4, wherein the occurrence of M attached to Q represents substituted NR''.
- 9. A compound of claim 4, wherein Q represents a substituted or unsubstituted nitrogencontaining heterocycle.
- 10. A compound of claim 4, wherein Q represents a substituted or unsubstituted tertiary amino group.
- 11. A compound, or an isomeric, prodrug, tautomeric, pharmaceutically acceptable salt, N-oxide, or stereoisomeric form thereof, having a structure of Formula II:

wherein

B represents  $M_nR_8$ ;

Ar represents an aryl or heteroaryl ring;

V represents O, S, or N-CN;

W represents O, S, or NR";

R' represents, independently for each occurrence, H, lower alkyl, or a metal counterion;

R" represents, independently for each occurrence, H or lower alkyl;

R'" represents H or optionally substituted lower alkyl;

R<sub>5</sub> represents M<sub>n</sub>JK;

 $R_6$  represents H, OH, or  $M_nQ$ ;

R<sub>7</sub> represents H, halogen, hydroxyl, lower alkyl or lower alkoxyl;

R<sub>8</sub> represents substituted or unsubstituted alkyl, alkenyl, alkynyl, alkoxy, aryl, heteroaryl, cyclo-alkyl, heterocyclyl, or amine;

J represents C(=O), C(=S), or  $SO_2$ ;

K represents OR', NR'', or N(R')SO<sub>2</sub>R'';

M, independently for each occurrence, represents a substituted or unsubstituted methylene group, NR'', O, S, S(O), or S(O<sub>2</sub>);

n represents an integer from 1-7 when present in B, from 0-6 when present in  $R_5$ , and from 1-3 when present in  $R_6$ ; and

Q represents a substituted or unsubstituted: tertiary amino substituent or nitrogencontaining heterocycle.

- 12. A compound of claim 11, wherein R<sub>8</sub> represents substituted or unsubstituted morpholino, piperazinyl, or cyclohexyl.
- 13. A compound of claim 11, wherein R" represents H.
- 14. A compound of claim 11, wherein  $R_6$  represents  $M_nQ$
- 15. A compound of claim 14, wherein the occurrence of M attached to Q represents  $CH_2$ ,  $S(O_2)$ , C(=S), or C(=O).
- 16. A compound of claim 15, wherein the occurrence of M attached to Q is C(=O).
- 17. A compound of claim 15, wherein the occurrence of M attached to Q represents CH<sub>2</sub>.
- 18. A compound of claim 14, wherein the occurrence of M attached to Q represents substituted NR".

- 19. A compound of claim 14, wherein Q represents a substituted or unsubstituted tertiary amino substituent.
- 20. A compound of claim 14, wherein Q represents a substituted or unsubstituted nitrogen-containing heterocycle.
- 21. A compound of any of claims 1, 7, 9 and 11, wherein substituents include, independently for each occurrence, alkyl, oxo, acyl amino, hydroxyl, carbonyl, sulfonyl, ester, amide, NR", hydroxy alkyl, alkoxy alkyl, aryl, heterocyclyl, cycloalkyl, or oligo(ethylene glycol).
- 22. A pharmaceutical composition comprising a pharmaceutically acceptable excipient and a compound of any of claims 1, 7, 9 and 11.
- 23. A method of treating a hyperproliferative disorder, comprising administering to an animal a compound of any of claims 1, 7, 9 and 11.
- 24. A method of inhibiting proliferation of a cell, comprising contacting the cell with a compound of any of claims 1, 7, 9 and 11.
- 25. A method of treating a viral infection, comprising administering to a mammal a compound of any of claims 1, 7, 9 and 11.
- 26. The method of claim 25, wherein the viral infection is caused by a human immunodeficiency virus (HIV).
- 27. A method for the treatment or prevention of alopecia induced by chemotherapy or radiation therapy, comprising administering to a mammal a compound of any of claims 1, 7, 9, and 11 conjointly with one or more chemotherapeutics or radiation therapy.
- 28. A compound, or an isomeric, prodrug, tautomeric, pharmaceutically acceptable salt, N-oxide, or stereoisomeric form thereof, having a structure of Formula I:

wherein

Ar represents an aryl or heteroaryl ring;

W represents O, S, or NR";

X represents, independently for each occurrence, methyl or halogen;

Y represents H, X, or a sulfonamide;

R' represents, independently for each occurrence, H, lower alkyl, or a metal counterion;

R" represents, independently for each occurrence, H or lower alkyl;

 $R_1$  represents H, P(=O)(OR')<sub>2</sub>, or  $M_nQ$ ;

 $R_2$  represents H, OH, or  $M_nQ$ , wherein one and only one of  $R_1$  and  $R_2$  represents H;

 $R_3$  represents from 0 to 3 substituents on the ring to which it is attached, selected from halogen, lower alkyl, lower alkoxy, hydroxyl, and N(R'')<sub>2</sub>;

M, independently for each occurrence, represents a substituted or unsubstituted methylene group (including C(=S) and C(=O)), NR'', O, S, S(O), or S(O<sub>2</sub>);

n represents an integer from 1 to 5; and

Q represents a substituted or unsubstituted: tertiary amino substituent or nitrogencontaining heterocycle.

- 29. A compound of claim 28, wherein Q represents a substituted or unsubstituted nitrogen-containing heterocycle.
- 30. The compound of claim 28, wherein  $R_1W$  and  $R_2$  are ortho to each other on Ar but are not ortho to the methylene substituent attached to the bicyclic core.
- 31. The compound of claim 28, wherein Ar represents a heteroaryl ring.

- 32. The compound of claim 27, wherein R<sub>3</sub> represents 1-3 substituents on the ring to which it is attached.
- 33. The compound of claim 28, wherein Y represents  $S(O_2)N(R'''')_2$ , wherein R'''' represents, independently for each occurrence, H, lower alkoxyl, or lower alkyl.
- 34. The compound of claim 33, wherein both occurrences of R'''' taken together with N form a substituted or unsubstituted nitrogen-containing heterocycle.
- 35. A pharmaceutical composition comprising a pharmaceutically acceptable excipient and a compound of claim 28.
- 36. A method of treating a hyperproliferative disorder, comprising administering to an animal a compound of claim 28.
- 37. A method of inhibiting proliferation of a cell, comprising contacting the cell with a compound of claim 28.
- 38. A method of treating a viral infection, comprising administering to a mammal a compound claim 28.
- 39. The method of claim 38, wherein the viral infection is caused by a human immunodeficiency virus (HIV).
- 40. A method for the treatment or prevention of alopecia induced by chemotherapy or radiation therapy, comprising administering to a mammal a compound of claim 28 conjointly with one or more chemotherapeutics or radiation therapy.
- 41. The use of a compound of claim 1, 11, or 28 for the manufacture of a medicament.